

Chemical Analysis Report

CEN-DIST-2019-08-30-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

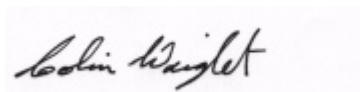
Event Description: **Eau Gallie X2 / Crane Crk**
Request ID: **RQ-2019-08-26-59**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 23-SEP-2019 08:37

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Eau Gallie River @ Ballard Park Boat Ramp

Collection Date/Time: 08/29/2019 10:55

Field ID: G5CE0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116136	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P370014	
	EPA 300.0	Bromide	24		mg Br/L	P370340	
	SM 2320 B-97	Total Alkalinity	109		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	6	I	mg/L	P370254	
	SM 4500 F-C-97	Fluoride	0.59		mg F/L	P370211	
2116139	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P370325	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P370146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P370122	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P370333	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P370307	
2116142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P370008	
2116165	EPA 8321B	2,4-D	0.40		ug/L	P370004	MS
		Acesulfame K**	0.10	UJ	ug/L	P370034	SUR
		AMPA**	1.0	U	ug/L	P370034	MS
		Sucralose**	0.45		ug/L	P370034	
		Acetaminophen**	0.019	I	ug/L	P370004	
		Endothall**	0.25	UJ	ug/L	P370034	SUR
		Acetamiprid**	0.0020	U	ug/L	P370004	
		Glufosinate**	1.0	U	ug/L	P370034	
		Glyphosate**	1.0	U	ug/L	P370034	
		Afidopyropen**	0.0020	UJ	ug/L	P370004	
		Bentazon	0.014		ug/L	P370004	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370004	
		Carbamazepine**	9.0E-04	I	ug/L	P370004	
		Clothianidin**	0.0025	I	ug/L	P370004	
		Dinotefuran**	0.0020	U	ug/L	P370004	
		Diuron	0.0039	I	ug/L	P370004	
		Fenuron	0.016	U	ug/L	P370004	
		Fluridone**	0.0077		ug/L	P370004	
		Imazapyr**	0.089		ug/L	P370004	
		Hydrocodone**	0.0020	U	ug/L	P370004	
		Ibuprofen**	0.020	U	ug/L	P370004	
		Imidacloprid	0.022		ug/L	P370004	MS
		Linuron	0.0040	U	ug/L	P370004	
		Mandestrobin**	0.0020	UJ	ug/L	P370004	
		MCP	0.0053	I	ug/L	P370004	MS
		Naproxen**	0.0080	U	ug/L	P370004	
		Primidone**	0.0040	U	ug/L	P370004	
		Pyraclostrobin**	0.0020	U	ug/L	P370004	
		Thiamethoxam**	0.0021	I	ug/L	P370004	MS
		Tolfenpyrad**	0.0020	U	ug/L	P370004	
		Triclopyr**	0.0040	U	ug/L	P370004	MS

Field ID: G5CE0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.
EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference.

Sample Location: Eau Gallie River downstream of US Hwy 1 Bridge

Collection Date/Time: 08/29/2019 11:11

Field ID: G5CE0096

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116137	EPA 180.1 Rev. 2.0	Turbidity	2.9	A	NTU	P370014	
	EPA 300.0	Bromide	23		mg Br/L	P370340	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	6	I	mg/L	P370254	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P370211	
2116140	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P370325	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P370146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370122	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P370333	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P370307	
2116143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P370008	
2116166	EPA 8321B	2,4-D	0.45		ug/L	P370131	
		Acesulfame K**	0.10	UJ	ug/L	P370034	SUR
		AMPA**	1.0	U	ug/L	P370034	MS
		Sucralose**	0.50		ug/L	P370034	
		Acetaminophen**	0.0080	U	ug/L	P370131	
		Endothall**	0.25	UJ	ug/L	P370034	SUR
		Acetamiprid**	0.0020	U	ug/L	P370131	
		Glufosinate**	1.0	U	ug/L	P370034	
		Glyphosate**	1.0	U	ug/L	P370034	
		Afidopyropen**	0.0020	UJ	ug/L	P370131	
		Bentazon	0.015		ug/L	P370131	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370131	
		Carbamazepine**	0.0010	I	ug/L	P370131	
		Clothianidin**	0.0022	I	ug/L	P370131	
		Dinotefuran**	0.0020	U	ug/L	P370131	
		Diuron	0.0039	I	ug/L	P370131	
		Fenuron	0.016	U	ug/L	P370131	
		Fluridone**	0.0077		ug/L	P370131	
		Imazapyr**	0.083		ug/L	P370131	
		Hydrocodone**	0.0020	U	ug/L	P370131	
		Ibuprofen**	0.020	U	ug/L	P370131	
		Imidacloprid	0.023	J	ug/L	P370131	MS
		Linuron	0.0040	U	ug/L	P370131	
		Mandestrobin**	0.0020	UJ	ug/L	P370131	
		MCPD	0.0058	IJ	ug/L	P370131	LCS, MS
		Naproxen**	0.0080	UJ	ug/L	P370131	RPD
		Primidone**	0.0040	U	ug/L	P370131	
		Pyraclostrobin**	0.0020	U	ug/L	P370131	
		Thiamethoxam**	0.0026	I	ug/L	P370131	
		Tolfenpyrad**	0.0020	U	ug/L	P370131	
		Triclopyr**	0.0040	U	ug/L	P370131	

Field ID: G5CE0096

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for 2,4-D and imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference.

Sample Location: Crane Creek @ 200m upstream of RR Bridge

Collection Date/Time: 08/29/2019 11:52

Field ID: G5CE0097

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116138	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P370014	
	EPA 300.0	Bromide	2.6		mg Br/L	P370340	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P370282	
	SM 2540 D-97	TSS	2	I	mg/L	P370252	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P370284	
2116141	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P370323	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P370148	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P370185	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P370334	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P370245	
2116144	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P370009	
2116167	EPA 8321B	2,4-D	0.33		ug/L	P370131	
		Acesulfame K**	1.0	U	ug/L	P370034	
		AMPA**	0.12	I	ug/L	P370034	MS
		Sucralose**	0.50		ug/L	P370034	
		Acetaminophen**	0.0080	U	ug/L	P370131	
		Endothall**	2.5	U	ug/L	P370034	
		Acetamiprid**	0.0020	U	ug/L	P370131	
		Glufosinate**	0.10	U	ug/L	P370034	
		Glyphosate**	0.82		ug/L	P370034	
		Afidopyropen**	0.0020	UJ	ug/L	P370131	
		Bentazon	0.025		ug/L	P370131	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370131	
		Carbamazepine**	0.0018	I	ug/L	P370131	
		Clothianidin**	0.0063	I	ug/L	P370131	
		Dinotefuran**	0.0020	U	ug/L	P370131	
		Diuron	0.024		ug/L	P370131	
		Fenuron	0.016	U	ug/L	P370131	
		Fluridone**	0.024		ug/L	P370131	
		Imazapyr**	0.22		ug/L	P370131	
		Hydrocodone**	0.0020	U	ug/L	P370131	
		Ibuprofen**	0.020	U	ug/L	P370131	
		Imidacloprid	0.071		ug/L	P370131	MS
		Linuron	0.0040	U	ug/L	P370131	
		Mandestrobin**	0.0020	UJ	ug/L	P370131	
		MCPP	0.0097	J	ug/L	P370131	LCS, MS
		Naproxen**	0.0080	U	ug/L	P370131	RPD
		Primidone**	0.0040	U	ug/L	P370131	
		Pyraclostrobin**	0.0020	U	ug/L	P370131	
		Thiamethoxam**	0.0029	I	ug/L	P370131	
		Tolfenpyrad**	0.0020	U	ug/L	P370131	
		Triclopyr**	0.0040	U	ug/L	P370131	

Field ID: G5CE0097

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for 2,4-D and imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.
EPA 8321B: MDL for some parameters elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370014

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P370340

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370323

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370325

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370146

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370148

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370122

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370185

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370333

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370008

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370009

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P370004

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P370034

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P370034

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P370131

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P370209

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-97
Batch ID: P370282

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P370252

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P370254

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P370211

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P370284

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P370245

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P370307

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P370340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	101		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.8		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P370008

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P370009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P370004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 160
Acetaminophen	73.1		P	30 - 160
Acetamiprid	87.0		P	40 - 160
Afidopyropen	99.1		P	40 - 160
Bentazon	90.4		P	30 - 160
Benzovindiflupyr	87.2		P	40 - 160
Carbamazepine	94.7		P	40 - 160
Clothianidin	94.1		P	40 - 160
Dinotefuran	82.7		P	40 - 160
Diuron	97.6		P	40 - 160
Fenuron	99.3		P	40 - 160
Fluridone	107		P	40 - 160
Hydrocodone	90.7		P	40 - 160
Ibuprofen	135		P	30 - 160
Imazapyr	75.9		P	40 - 160
Imidacloprid	94.2		P	40 - 160
Linuron	76.7		P	40 - 160
Mandestrobin	95.7		P	40 - 160
MCPP	139		P	40 - 160
Naproxen	112		P	40 - 160
Primidone	82.6		P	40 - 160
Pyraclostrobin	87.1		P	30 - 160
Thiamethoxam	91.7		P	40 - 160
Tolfenpyrad	70.6		P	40 - 160
Triclopyr	75.8		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P370034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	150		P	40 - 150
AMPA	149		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	118		P	40 - 150
Glyphosate	130		P	40 - 140
Sucralose	101		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P370131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	145		P	40 - 160
Acetaminophen	81.4		P	30 - 160
Acetamiprid	86.3		P	40 - 160
Afidopyropen	95.6		P	40 - 160
Bentazon	89.3		P	30 - 160
Benzovindiflupyr	95.5		P	40 - 160
Carbamazepine	100		P	40 - 160
Clothianidin	98.5		P	40 - 160
Dinotefuran	93.9		P	40 - 160
Diuron	100		P	40 - 160
Fenuron	106		P	40 - 160
Fluridone	106		P	40 - 160
Hydrocodone	92.2		P	40 - 160
Ibuprofen	117		P	30 - 160
Imazapyr	84.2		P	40 - 160
Imidacloprid	104		P	40 - 160
Linuron	72.6		P	40 - 160
Mandestrobin	102		P	40 - 160
MCPP	178		F	40 - 160
Naproxen	124		P	40 - 160
Primidone	94.9		P	40 - 160
Pyraclostrobin	99.1		P	30 - 160
Thiamethoxam	106		P	40 - 160
Tolfenpyrad	78.8		P	40 - 160
Triclopyr	105		P	30 - 160

Reference Method: SM 2320 B-97

Batch ID: P370209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 2320 B-97

Batch ID: P370282

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97

Batch ID: P370211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97

Batch ID: P370284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P370245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P370307

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P370340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116013	Bromide	93.8	94.7	P/P	90 - 110
2116078	Bromide	94.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116070	Ammonia-N	97.0	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116075	Ammonia-N	95.5	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116075	Kjeldahl Nitrogen	94.1	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116071	Kjeldahl Nitrogen	94.1	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116059	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116125	NO2NO3-N	95.8	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115926	Total-P	95.2	92.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116044	Total-P	98.8	99.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370008

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116076	O-Phosphate-P	97.7	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115956	O-Phosphate-P	99.1	98.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P370004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115469	2,4-D	205	180	F/F	40 - 160
2115469	Acetaminophen	104	83.0	P/P	30 - 160
2115469	Acetamiprid	107	102	P/P	40 - 160
2115469	Afidopyropen	114	99.1	P/P	40 - 160
2115469	Bentazon	56.8	55.7	P/P	30 - 160
2115469	Benzovindiflupyr	114	101	P/P	40 - 160
2115469	Carbamazepine	121	109	P/P	40 - 160
2115469	Clothianidin	139	123	P/P	40 - 160
2115469	Dinotefuran	138	118	P/P	40 - 160
2115469	Diuron	115	102	P/P	40 - 160
2115469	Fenuron	102	93.6	P/P	40 - 160
2115469	Fluridone	127	109	P/P	40 - 160
2115469	Hydrocodone	121	114	P/P	40 - 160
2115469	Ibuprofen	150	144	P/P	30 - 160
2115469	Imazapyr	112	102	P/P	40 - 160
2115469	Imidacloprid	257	210	F/F	40 - 160
2115469	Linuron	87.8	77.1	P/P	40 - 160
2115469	Mandestrobin	113	103	P/P	40 - 160
2115469	MCP	238	221	F/F	40 - 160
2115469	Naproxen	136	133	P/P	40 - 160
2115469	Primidone	117	112	P/P	40 - 160
2115469	Pyraclostrobin	109	108	P/P	30 - 160
2115469	Thiamethoxam	206	178	F/F	40 - 160
2115469	Tolfenpyrad	101	93.7	P/P	40 - 160
2115469	Triclopyr	162	137	F/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P370034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115665	Acesulfame K	136	139	P/P	40 - 150
2115665	AMPA	150	153	P/F	40 - 150
2115665	Endothall	107	106	P/P	40 - 150
2115665	Glufosinate	119	118	P/P	40 - 150
2115665	Glyphosate	128	132	P/P	40 - 140
2115665	Sucralose	93.3	113	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P370131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116166	Acetaminophen	78.5	81.5	P/P	30 - 160
2116166	Acetamiprid	106	88.4	P/P	40 - 160
2116166	Afidopyropen	142	133	P/P	40 - 160
2116166	Bentazon	65.4	53.2	P/P	30 - 160
2116166	Benzovindiflupyr	117	102	P/P	40 - 160
2116166	Carbamazepine	95.6	91.7	P/P	40 - 160
2116166	Clothianidin	102	101	P/P	40 - 160
2116166	Dinotefuran	107	105	P/P	40 - 160
2116166	Diuron	86.8	88.1	P/P	40 - 160
2116166	Fenuron	85.5	81.7	P/P	40 - 160
2116166	Fluridone	103	107	P/P	40 - 160
2116166	Hydrocodone	92.1	91.2	P/P	40 - 160
2116166	Ibuprofen	125	132	P/P	30 - 160
2116166	Imidacloprid	200	194	F/F	40 - 160
2116166	Linuron	64.8	68.1	P/P	40 - 160
2116166	Mandestrobin	109	99.9	P/P	40 - 160
2116166	MCCP	231	224	F/F	40 - 160
2116166	Naproxen	97.7	153	P/P	40 - 160
2116166	Primidone	103	97.3	P/P	40 - 160
2116166	Pyraclostrobin	122	107	P/P	30 - 160
2116166	Thiamethoxam	150	138	P/P	40 - 160
2116166	Tolfenpyrad	88.9	85.2	P/P	40 - 160
2116166	Triclopyr	126	157	P/P	30 - 160

Reference Method: SM 4500 F-C-97
 Batch ID: P370211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115531	Fluoride	97.5	96.9	P/P	89 - 106

Reference Method: SM 4500 F-C-97
 Batch ID: P370284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116463	Fluoride	98.5	97.4	P/P	89 - 106

Reference Method: SM 5310 B-00
 Batch ID: P370245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116070	Organic Carbon	102	102	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P370307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116863	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116137	Turbidity	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P370340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116013	Bromide	0.722	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116070	Ammonia-N	0.236	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116075	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116075	Kjeldahl Nitrogen	2.22	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116071	Kjeldahl Nitrogen	1.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116059	NO2NO3-N	0.993	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116125	NO2NO3-N	0.495	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115926	Total-P	3.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116044	Total-P	0.368	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P370008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116076	O-Phosphate-P	0.486	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P370009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115956	O-Phosphate-P	0.303	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P370004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115469	2,4-D	13.0	Spike	P	0 - 30
2115469	Acetaminophen	22.4	Spike	P	0 - 30
2115469	Acetamiprid	4.65	Spike	P	0 - 30
2115469	Afidopyropen	13.7	Spike	P	0 - 30
2115469	Bentazon	1.91	Spike	P	0 - 30
2115469	Benzovindiflupyr	11.5	Spike	P	0 - 30
2115469	Carbamazepine	10.1	Spike	P	0 - 30
2115469	Clothianidin	12.1	Spike	P	0 - 30
2115469	Dinotefuran	16.1	Spike	P	0 - 30
2115469	Diuron	11.9	Spike	P	0 - 30
2115469	Fenuron	8.16	Spike	P	0 - 30
2115469	Fluridone	15.8	Spike	P	0 - 30
2115469	Hydrocodone	6.14	Spike	P	0 - 30
2115469	Ibuprofen	4.27	Spike	P	0 - 30
2115469	Imazapyr	9.35	Spike	P	0 - 30
2115469	Imidacloprid	20.2	Spike	P	0 - 30
2115469	Linuron	12.9	Spike	P	0 - 30
2115469	Mandestrobin	9.43	Spike	P	0 - 30
2115469	MCPP	7.30	Spike	P	0 - 30
2115469	Naproxen	2.65	Spike	P	0 - 30
2115469	Primidone	4.61	Spike	P	0 - 30
2115469	Pyraclostrobin	1.19	Spike	P	0 - 30
2115469	Thiamethoxam	14.8	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P370004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115469	Tolfenpyrad	7.84	Spike	P	0 - 30
2115469	Triclopyr	17.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P370034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115665	Acesulfame K	2.52	Spike	P	0 - 30
2115665	AMPA	2.19	Spike	P	0 - 30
2115665	Endothall	0.565	Spike	P	0 - 30
2115665	Glufosinate	0.959	Spike	P	0 - 30
2115665	Glyphosate	3.46	Spike	P	0 - 30
2115665	Sucralose	19.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P370131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116166	2,4-D	3.50	Spike	P	0 - 30
2116166	Acetaminophen	3.75	Spike	P	0 - 30
2116166	Acetamiprid	17.9	Spike	P	0 - 30
2116166	Afidopyropen	6.87	Spike	P	0 - 30
2116166	Bentazon	8.98	Spike	P	0 - 30
2116166	Benzovindiflupyr	13.4	Spike	P	0 - 30
2116166	Carbamazepine	3.91	Spike	P	0 - 30
2116166	Clothianidin	1.49	Spike	P	0 - 30
2116166	Dinotefuran	2.05	Spike	P	0 - 30
2116166	Diuron	1.42	Spike	P	0 - 30
2116166	Fenuron	4.52	Spike	P	0 - 30
2116166	Fluridone	2.58	Spike	P	0 - 30
2116166	Hydrocodone	1.07	Spike	P	0 - 30
2116166	Ibuprofen	5.56	Spike	P	0 - 30
2116166	Imazapyr	8.34	Spike	P	0 - 30
2116166	Imidacloprid	2.89	Spike	P	0 - 30
2116166	Linuron	4.99	Spike	P	0 - 30
2116166	Mandestrobin	8.27	Spike	P	0 - 30
2116166	MCP	3.30	Spike	P	0 - 30
2116166	Naproxen	44.1	Spike	F	0 - 30
2116166	Primidone	5.46	Spike	P	0 - 30
2116166	Pyraclostrobin	13.0	Spike	P	0 - 30
2116166	Thiamethoxam	8.32	Spike	P	0 - 30
2116166	Tolfenpyrad	4.23	Spike	P	0 - 30
2116166	Triclopyr	21.3	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P370209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P370209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115918	Total Alkalinity	0.386	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P370282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116463	Total Alkalinity	1.36	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
 Batch ID: P370211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115531	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P370284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116463	Fluoride	0.958	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P370245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116070	Organic Carbon	0.460	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P370307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116863	Organic Carbon	0.0823	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2116165
Field Sample ID: G5CE0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.7	P	30 - 160
EPA 8321B	Diuron-d6	97.5	P	30 - 160
EPA 8321B	Endothall-d6	320	F	30 - 160
EPA 8321B	Endothall-d6	320	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	32.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	32.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	120	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160

Lab Sample ID: 2116166
Field Sample ID: G5CE0096

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.4	P	30 - 160
EPA 8321B	Diuron-d6	94.2	P	30 - 160
EPA 8321B	Endothall-d6	338	F	30 - 160
EPA 8321B	Endothall-d6	338	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	103	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160

Lab Sample ID: 2116167
Field Sample ID: G5CE0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.6	P	30 - 160
EPA 8321B	Diuron-d6	98.4	P	30 - 160
EPA 8321B	Endothall-d6	128	P	30 - 160
EPA 8321B	Endothall-d6	128	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	44.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	44.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	107	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	130	P	30 - 160
EPA 8321B	Sucralose-d6	130	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93926

Included Lab Sample IDs: 2116142, 2116143, 2116144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93927

Included Lab Sample IDs: 2116136, 2116137, 2116138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93971

Included Lab Sample IDs: 2116139, 2116140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93975

Included Lab Sample IDs: 2116165, 2116166, 2116167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	109	P/P	60 - 160
Glufosinate	110	116	P/P	60 - 160
Glyphosate	117	119	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93977

Included Lab Sample IDs: 2116165, 2116166, 2116167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	108	P/P	60 - 160
Endothall	113	117	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93996

Included Lab Sample IDs: 2116165, 2116166, 2116167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.5	91.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93999

Included Lab Sample IDs: 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94010

Included Lab Sample IDs: 2116139, 2116140, 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	93.1	P/P	90 - 110
Kjeldahl Nitrogen	98.2	90.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94011

Included Lab Sample IDs: 2116136, 2116137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94011

Included Lab Sample IDs: 2116136, 2116137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A94021

Included Lab Sample IDs: 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	106	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94038

Included Lab Sample IDs: 2116138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94038

Included Lab Sample IDs: 2116138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A94054

Included Lab Sample IDs: 2116139, 2116140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94059

Included Lab Sample IDs: 2116139, 2116140, 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.4	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94059

Included Lab Sample IDs: 2116139, 2116140, 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	93.6	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A94066

Included Lab Sample IDs: 2116136, 2116137, 2116138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94099

Included Lab Sample IDs: 2116141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94102

Included Lab Sample IDs: 2116139, 2116140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.0	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94124

Included Lab Sample IDs: 2116165, 2116166, 2116167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	122	P/P	50 - 150
Acetaminophen	104	98.9	P/P	60 - 160
Acetamiprid	108	108	P/P	50 - 150
Afidopyropen	107	98.0	P/P	50 - 150
Bentazon	95.8	92.4	P/P	50 - 160
Benzovindiflupyr	104	105	P/P	50 - 150
Carbamazepine	114	114	P/P	60 - 150
Clothianidin	116	117	P/P	60 - 150
Dinotefuran	96.7	103	P/P	50 - 150
Diuron	106	107	P/P	60 - 150
Fenuron	110	109	P/P	60 - 150
Fluridone	122	124	P/P	60 - 160
Hydrocodone	98.0	104	P/P	60 - 150
Ibuprofen	101	123	P/P	50 - 160
Imazapyr	80.9	78.5	P/P	50 - 150
Imidacloprid	97.4	101	P/P	60 - 150
Linuron	89.7	93.2	P/P	60 - 150
Mandestrobin	118	115	P/P	50 - 150
MCPP	125	127	P/P	50 - 150
Naproxen	131	109	P/P	50 - 160
Primidone	100	102	P/P	60 - 150
Pyraclostrobin	116	116	P/P	60 - 150
Thiamethoxam	97.7	99.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94124

Included Lab Sample IDs: 2116165, 2116166, 2116167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tolfenpyrad	133	126	P/P	60 - 150
Tolfenpyrad	140	132	P/P	60 - 150
Triclopyr	118	128	P/P	50 - 150

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.05	
EPA 300.0	Bromide	97.8	93.8	94.7	94.6		0.722
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	97.0	97.4			0.236
	Ammonia-N	101	95.5	93.8			1.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.4	94.1	96.6			2.22
	Kjeldahl Nitrogen	96.6	94.1	96.0			1.26
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101	100			0.993
	NO2NO3-N	104	95.8	95.2			0.495
EPA 365.1 Rev. 2.0	Total-P	95.2	95.2	92.0			3.07
	Total-P	93.8	98.8	99.4			0.368
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	97.7	98.2			0.486
	O-Phosphate-P	98.5	99.1	98.8			0.303
EPA 8321B	2,4-D	110	205	180			13.0
	2,4-D	145					3.50
	Acesulfame K	150	136	139			2.52
	Acetaminophen	73.1	104	83.0			22.4
	Acetaminophen	81.4	78.5	81.5			3.75
	Acetamiprid	87.0	107	102			4.65
	Acetamiprid	86.3	106	88.4			17.9
	Afidopyropen	99.1	114	99.1			13.7
	Afidopyropen	95.6	142	133			6.87
	AMPA	149	150	153			2.19
	Bentazon	90.4	56.8	55.7			1.91
	Bentazon	89.3	65.4	53.2			8.98
	Benzovindiflupyr	87.2	114	101			11.5
	Benzovindiflupyr	95.5	117	102			13.4
	Carbamazepine	94.7	121	109			10.1
	Carbamazepine	100	95.6	91.7			3.91
	Clothianidin	94.1	139	123			12.1
	Clothianidin	98.5	102	101			1.49
	Dinotefuran	82.7	138	118			16.1
	Dinotefuran	93.9	107	105			2.05
	Diuron	97.6	115	102			11.9
	Diuron	100	86.8	88.1			1.42
	Endothall	109	107	106			0.565
	Fenuron	99.3	102	93.6			8.16
	Fenuron	106	85.5	81.7			4.52
	Fluridone	107	127	109			15.8
	Fluridone	106	103	107			2.58
	Glufosinate	118	119	118			0.959
	Glyphosate	130	128	132			3.46
	Hydrocodone	90.7	121	114			6.14
	Hydrocodone	92.2	92.1	91.2			1.07
	Ibuprofen	135	150	144			4.27
	Ibuprofen	117	125	132			5.56
	Imazapyr	75.9	112	102			9.35
	Imazapyr	84.2					8.34
	Imidacloprid	94.2	257	210			20.2
	Imidacloprid	104	200	194			2.89
	Linuron	76.7	87.8	77.1			12.9
	Linuron	72.6	64.8	68.1			4.99
	Mandestrobin	95.7	113	103			9.43
	Mandestrobin	102	109	99.9			8.27
	MCPP	139	238	221			7.30

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	MCPP	178	231	224			3.30
	Naproxen	112	136	133			2.65
	Naproxen	124	97.7	153			44.1
	Primidone	82.6	117	112			4.61
	Primidone	94.9	103	97.3			5.46
	Pyraclostrobin	87.1	109	108			1.19
	Pyraclostrobin	99.1	122	107			13.0
	Sucralose	101	93.3	113			19.1
	Thiamethoxam	91.7	206	178			14.8
	Thiamethoxam	106	150	138			8.32
	Tolfenpyrad	70.6	101	93.7			7.84
	Tolfenpyrad	78.8	88.9	85.2			4.23
	Triclopyr	75.8	162	137			17.1
	Triclopyr	105	126	157			21.3
SM 2320 B-97	Total Alkalinity	105				0.386	
	Total Alkalinity	104				1.36	
SM 4500 F-C-97	Fluoride	96.5	97.5	96.9			0.473
	Fluoride	98.9	98.5	97.4			0.958
SM 5310 B-00	Organic Carbon	102	102	102			0.460
	Organic Carbon	107	101	101			0.0823

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2116136, 2116137, 2116138
EPA 300.0 / E31780	Bromide in aqueous matrices	2116136, 2116137, 2116138
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2116139, 2116140, 2116141
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2116139, 2116140, 2116141
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2116139, 2116140, 2116141
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2116139, 2116140, 2116141
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2116142, 2116143, 2116144
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2116165, 2116166, 2116167
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2116165, 2116166, 2116167
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2116136, 2116137, 2116138
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2116136, 2116137, 2116138
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2116136, 2116137, 2116138
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2116139, 2116140, 2116141

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/30/2019			08/30/2019 16:15	Samantha Davila	2116136, 2116137, 2116138
EPA 300.0	08/30/2019			09/06/2019 20:50	Jhamieka S. Greenwood	2116136
	08/30/2019			09/06/2019 21:07	Jhamieka S. Greenwood	2116137
	08/30/2019			09/06/2019 21:24	Jhamieka S. Greenwood	2116138
EPA 350.1 Rev. 2.0	08/30/2019			09/06/2019 13:01	Ping Hua	2116141
	08/30/2019			09/06/2019 14:03	Ping Hua	2116139
	08/30/2019			09/06/2019 14:04	Ping Hua	2116140
EPA 351.2 Rev. 2.0	08/30/2019	09/04/2019 11:58	Sima Feizi	09/05/2019 10:52	Joseph Suarez	2116139
	08/30/2019	09/04/2019 11:58	Sima Feizi	09/05/2019 10:54	Joseph Suarez	2116140
	08/30/2019	09/04/2019 13:40	Sima Feizi	09/05/2019 12:16	Joseph Suarez	2116141
EPA 353.2 Rev. 2.0	08/30/2019			09/04/2019 10:26	Beverly Y. Sanders	2116139
	08/30/2019			09/04/2019 10:28	Beverly Y. Sanders	2116140
	08/30/2019			09/05/2019 11:18	Beverly Y. Sanders	2116141
EPA 365.1 Rev. 2.0	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 11:29	Rosalyn Ballman	2116141
	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 14:29	Rosalyn Ballman	2116139
	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 14:30	Rosalyn Ballman	2116140
EPA 365.1 Rev. 2.0 dissolved	08/30/2019			08/30/2019 14:46	Jhamieka S. Greenwood	2116142
	08/30/2019			08/30/2019 14:47	Jhamieka S. Greenwood	2116143
	08/30/2019			08/30/2019 14:50	Jhamieka S. Greenwood	2116144
EPA 8321B	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 14:06	Rebecca Ware	2116167
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 14:28	Rebecca Ware	2116165
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 14:39	Rebecca Ware	2116166
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 20:41	Rebecca Ware	2116165
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 20:54	Rebecca Ware	2116166
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 22:04	Rebecca Ware	2116167
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/04/2019 19:28	Rebecca Ware	2116165
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/04/2019 19:40	Rebecca Ware	2116166
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/04/2019 19:52	Rebecca Ware	2116167
	08/30/2019	09/04/2019 07:00	Fe-Val Siddell	09/06/2019 04:04	Juyoung Kim	2116165
	08/30/2019	09/05/2019 09:00	Fe-Val Siddell	09/06/2019 08:06	Juyoung Kim	2116166
	08/30/2019	09/05/2019 09:00	Fe-Val Siddell	09/06/2019 08:41	Juyoung Kim	2116167
SM 2320 B-97	08/30/2019			09/05/2019 05:10	Dale L. Simmons	2116137
	08/30/2019			09/05/2019 05:23	Dale L. Simmons	2116136
	08/30/2019			09/06/2019 04:11	Dale L. Simmons	2116138
SM 2540 D-97	08/30/2019			08/30/2019 15:41	Yijie Li	2116136, 2116137, 2116138
SM 4500 F-C-97	08/30/2019			09/05/2019 02:52	Dale L. Simmons	2116137
	08/30/2019			09/05/2019 03:05	Dale L. Simmons	2116136
	08/30/2019			09/06/2019 04:11	Dale L. Simmons	2116138
SM 5310 B-00	08/30/2019			09/05/2019 22:17	Madeline Funaro	2116141
	08/30/2019			09/07/2019 04:32	Madeline Funaro	2116139

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	08/30/2019			09/07/2019 05:03	Madeline Funaro	2116140